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Has India Addressed Its Farmers' Woes? A Story of Plant Protection Issues

SRIVIDHYA RAGAVAN* & JAMIE MAYER O'SHIELDS**

At the time of independence, Winston Churchill referred to India as a mere “geographic expression.”¹ India’s emergence as a strong economy is the result of rigorous planning to balance economic needs with social justice. From a country where everything “*foren*” was shunned, the Indian *Yatra* is now ready to take on foreign ownership in all fields, including agriculture. As a mark of its willingness to liberalize, India attained membership to the WTO by taking on a package of trade obligations. “Trade obligations” are obligations of nations arising out of an agreement signed in 1992 to establish and create membership in the World Trade Organization (WTO).² As part of the WTO’s objectives to promote trade, minimum standards for intellectual property (IP) protection were established under the Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS)³ as a means to reduce barriers to international trade.

* Associate Professor of Law, University of Oklahoma College of Law, Norman, Oklahoma. An earlier version of this paper was presented at the Conference titled *Food Security & Nexus of Trade & Technology* at the University of Ottawa Law School. The paper was also presented at the Annual Meeting of the International Association for Teaching & Research in Intellectual Property Rights held at Montreal in May, 2005. Portions of this paper’s argument on UPOV and its ramifications have been presented at University of Illinois Law School, Cardozo Law School and the International Association of Intellectual Property Law Teachers Conference at Montreal, Canada, at various conferences dealing with international trade and its convergence with issues relating to intellectual property rights. Part of the paper dealing with issues relating to the International Union for Protection of Plant Varieties has been published as a part of a book chapter.

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1. Larry Arn, *Churchill’s Greatness (3)—The Gandhi Factor*, 108 *FINEST HOUR* (Autumn 2000), available at <http://www.winstonchurchill.org/i4a/pages/index.cfm?pageid=354>. Arn explains that Churchill also believed that the people of India were incapable of self-government at the time. Churchill insisted that India was divided among people of different tribes and religions, some of whom meant violence upon the others. *Id.*

2. Marrakesh Agreement Establishing the World Trade Organization, Annex 1C, *LEGAL INSTRUMENTS—RESULTS OF THE URUGUAY ROUND*, 33 I.L.M. 181 (1994) [hereinafter *WTO*]. The WTO consists of countries that are party to the Uruguay Round Agreements of the General Agreement on Tariffs and Trade (GATT). See 4 Pat. L. Fundamentals § 21:18 (2d ed.).

3. Agreement on Trade-Related Aspects of Intellectual Property Rights, Apr. 15, 1994, Marrakesh Agree-

India, with a view to fulfill its TRIPS obligations, passed the Protection of Plant Varieties and Farmers Rights Act of 2001⁴ (PPVFA). The Act represents a *sui generis* attempt to balance the rights of farmers and breeders, considering the huge farming population in the country. The term *sui generis* refers to systems engineered to meet the unique needs of a particular country or nation.⁵ The TRIPS agreement blesses such a form of protection for plant varieties by deviating from the norm of harmonizing IP rights.⁶ Thus, Article 27.3 of TRIPS embodies flexibility to protect plant varieties via "patents or by an *effective sui generis* system or by any combination thereof."⁷

Between developing and developed member nations, however, the flexibility of Article 27.3 has been a source of confusion. Developed nations construe a model codified as the International Union for the Protection of New Varieties of Plants (UPOV)⁸ as the minimum standard for establishing a *sui generis* system.⁹ Though UPOV is an example of a *sui generis* system of protection, developing nations, including India, refuse to treat it as the only option or as setting minimum standards for TRIPS compliance on the grounds that it fails to adequately protect farmers' rights.¹⁰ UPOV, developing nations believe, is more suited to developed nations, where farming is essentially large scale and dominated by breeders and seed industries.¹¹ In developing nations, modernization and mechanization are

ment Establishing the World Trade Organization, Annex 1C, Legal Instruments—Results of the Uruguay Round, 33 I.L.M. 1197 (1994) [hereinafter TRIPS]. The TRIPS agreement, signed as part of the agreements that established the WTO, introduced intellectual property rules to the multilateral trading system for the first time. The WTO is the only global organization dealing with the rules of trade among nations. The WTO was created by the Final Act Embodying the Results of the Uruguay Round of Multilateral Trade Negotiations. Introductory Note, General Agreement on Tariffs and Trade: Multilateral Trade Negotiations Final Act Embodying the Results of the Uruguay Round of Multilateral Trade Negotiations, Apr. 15, 1994, 33 I.L.M. 1125 (1994). See also Agreement Establishing the World Trade Organization, Apr. 15, 1994, 33 I.L.M. 1144 (1994).

4. The Protection of Plant Varieties and Farmers' Rights Act, No. 53 of 2001; INDIA CODE (2001) available at <http://indiacode.nic.in/fullact1.asp?tfnm=200153>. (Hereinafter, PPVFA). The President of India has assented to the PPVFA but the enactment has not come into force as of January 2007.

5. Dr. Gerard Bodeker, *Traditional Medical Knowledge, Intellectual Property Rights & Benefit Sharing*, 11 CARDOZO J. INT'L & COMP. L. 785, 790 (2003).

6. TRIPS, *supra* note 3, art. 27.

7. *Id.*

8. The term UPOV refers to the Union for Plant Variety Protection, a convention that was first signed in 1961 and later amended in 1972 and 1991. International Convention for the Protection of New Varieties of Plants, 33 U.S.T. 2703, 815 U.N.T.S. 109 [hereinafter UPOV 1961]; revised by 33 U.S.T. 2703 (1978) [hereinafter UPOV 1978]; revised by 815 U.N.T.S. 89 (1991) [hereinafter UPOV].

9. Genetic Resources Action International (GRAIN), *For a Full Review of TRIPS 27.3(b)*, Mar. 2000, http://www.grain.org/briefings_files/tripsfeb00.pdf [hereinafter GRAIN briefing]; Int'l Union for the Prot. of New Varieties of Plants, Position Paper, *The Notion of Breeder and Common Knowledge in Plant Variety Prot. Sys. Based Upon The UPOV Convention*, Apr. 19, 2002; see also Susan K. Sell, *Post-TRIPS Developments: The Tension Between Commercial and Social Agendas in the Context of Intellectual Property*, 14 FLA. J. INT'L L. 193, 203 (2002).

10. See generally Srividya Ragavan, *Of Plant Variety Protection, Agricultural Subsidies and the WTO*, INTELLECTUAL PROPERTY & INFORMATION WEALTH Vol. 4 (Peter K. Yu ed., 2007).

11. See Ratnakar Adhikari and Kamalesh Adhikari, *UPOV Faulty Agreement and Coercive Practices*, S.

exceptions rather than rules in the cultivation centric style of life. Hence, developing nations construe the term *sui generis* as allowing them the discretion to determine the type and design of plant protection regime.¹² Such a construction of the term *sui generis* has enabled developing nations to promote innovative plant breeding while preserving national objectives like protecting biodiversity, traditional farming, and food security.¹³ For developing nations, the important incentive was the ability to weigh the benefits of Plant Breeders' Rights (PBRs) in the context of socio-economic issues. That is, PBR's ability to increase foreign investments and consumer choice in agricultural commodities had to be viewed in the background of unique national concerns like its effect on local farmers or biodiversity. Consequently, developing countries felt a heightened need to introduce public interest exceptions that could balance the benefits from trade with national welfare issues.

In enacting the PPVFA, India, like other developing nations, took advantage of the Article 27.3 flexibilities by embracing a *sui generis* regime. India's PPVFA was noticed by the rest of the world for two reasons. First, it highlighted the complexity of farming in the developing world, which requires balancing the interests of the variety of actors involved in agricultural trade.¹⁴ Second, flaws notwithstanding, the PPVFA presented an alternative model to UPOV for poorer nations. Presumably, the PPVFA was passed because India hoped to benefit by introducing PBRs. With a view to compliment the PPVFA, the Ministry of Agriculture introduced a Seeds Bill in 2004 to encourage seed trade to promote the seed industry, boost exports, and protect seed quality.¹⁵ While TRIPS does not require governments to regulate seed trade, the passing of the PPVFA perhaps necessitated a review of the existing framework governing seed trade.

This paper examines whether the PPVFA, along with the proposed Seeds Bill, fulfills India's obligations under Article 27.3 of TRIPS. Further, the paper analyzes the benefits India is likely to derive from fulfilling these obligations. Part I examines Article 27.3 of TRIPS to analyze the constituents of the "effectiveness" requirement of the article. In analyzing whether the *sui generis* system in UPOV is effective, Part II argues that UPOV's effectiveness is

ASIA WATCH ON TRADE, ECON. & ENV'T, KATHMANDU, 2003, at 2, 6, available at <http://www.sawtee.org/pdf/upov%20policy%20brief.pdf> (arguing that developed nations' farmers constitute merely "one to five percent of their total population.") [hereinafter SAWTEE brief].

12. *Id.* at 1.

13. See generally Press Release, Action Aid Int'l and Gene Campaign, Why We Oppose UPOV and Why it is Urgent That Developing Countries Enact Their Own Plant Variety Protection Laws, (Oct. 17, 2002) (on file with author).

14. The three actors considered in this paper are: (1) breeders, (2) indigenous farmers, and (3) indigenous farming communities.

15. The Seeds Bill, 2004, No. 52, Acts of Parliament, 2004, http://rajyasabha.nic.in/bills-ls-rs/2004/LII_2004.pdf (last visited Sep. 26, 2007) [hereinafter Seeds Bill 2004]. The Seeds Bill 2004 is an enactment by India's Ministry of Agriculture. The Bill was introduced in the Rajya Sabha on Dec. 9, 2004, and has been referred to the Committee on Agriculture.

questionable considering that it has: (1) diluted eligibility standards, (2) exaggerated scope of breeders' rights, and (3) limited exceptions to breeders' rights. Part III, in examining the *effectiveness* of PPVFA and the proposed Seeds Bill, concludes that India should refrain from enacting the Seeds Bill and instead strengthen the PPVFA to achieve certain national objectives by plugging existing loopholes. The conclusion highlights that PBRs *per se* can potentially lead to increased research in agriculture despite the resulting privatization and monopolization. However, any benefits that Indians may potentially derive remains questionable until India pressures the WTO forum to aggressively reduce agricultural subsidies. Otherwise, introduction of PBRs in a market that is closed by prevailing subsidy levels could lead India towards a path of food insecurity.

I. THE *EFFECTIVENESS* REQUIREMENT OF ARTICLE 27.3 OF TRIPS

[M]embers shall provide for the protection of plant varieties either by patents or by an effective *sui generis* system or by any combination thereof.¹⁶

By leaving "plant varieties" undefined, TRIPS implies effective protection of all plant varieties. Members can choose *any one* of the three regimes: (1) patents, (2) a *sui generis* system, or (3) a combination of both patents and the *sui generis* system to protect plant varieties.¹⁷ Without setting substantive standards of protection, Article 27.3 narrows members' choice of regime through the effectiveness requirement.¹⁸ The open-ended language of the article creates a flexible standard of protection sympathetic to developing nations' socio-economic priorities, provided the *effectiveness* requirement is satisfied. The flexibility presents a range of possibilities from systems like the plant patent regime of the United States or specific variety protection systems of the European Union, to the possibility of customized plant protection regimes suited to the needs of developing nations.¹⁹

Effective Protection: The term "effective," which is the only standard outlined in TRIPS for protecting plants, is left undefined. Article 31 of the Vienna Convention, which gives the interpretive rules for undefined terms in international agreements, requires treaties to be read in light of their objectives and purposes.²⁰ Such an objective-based reading of an agreement is supported by the terms of the subsequent clarification made to TRIPS, generally known as the

16. TRIPS, *supra* note 3, art. 27.3.

17. *Id.* See also Doris Estelle Long, *The Impact of Foreign Investment on Indigenous Culture: An Intellectual Property Perspective*, 23 N.C.J. INT'L L. & COM. REG. 229, 263-64 (1998).

18. TRIPS, *supra* note 3, art. 27.3.

19. Joseph Straus, *Bargaining Around the TRIPS Agreement: The Case for Ongoing Public-Private Initiatives to Facilitate Worldwide Intellectual Property Transactions*, DUKE J. COMP. & INT'L L. 91, 100-01 (1998).

20. Vienna Convention on the Law of Treaties, art. 31, May 23, 1969, 1155 U.N.T.S. 331.

Doha Declaration.²¹ The Declaration states, “the TRIPS Council shall be guided by the objectives and principles set out in Articles 7 and 8 of the TRIPS Agreement and shall take fully into account the development dimension. . . .”²² Similarly, the Declaration on Public Health asserts that, “[i]n applying the customary rules of interpretation of public international law, each provision of the TRIPS Agreement shall be read in light of the object and purpose of the Agreement as expressed, in particular, in its objectives and principles.”²³ The provisions of TRIPS, including the *effectiveness* obligation in Article 27, should be read in light of the agreement objectives.

The objectives of TRIPS in Article 7 details that enforcement of IP mechanisms should “contribute to the promotion of technological innovation and to the transfer and dissemination of technology, to the mutual advantage of producers and users of technological knowledge”²⁴ Article 7 requires technology to be promoted “in a manner conducive to social and economic welfare and to balance of rights and obligations.”²⁵ Thus, the objective of TRIPS is to balance members’ IP protection obligations with their right to promote social and economic welfare.²⁶ The principles under which the objectives of Article 7 work are discussed in Article 8.²⁷ Entitled *Principles*, Article 8 recognizes each members’ right to adopt public health and public interest measures, provided they are consistent with the provisions of TRIPS.²⁸ An objective-based interpretation of TRIPS necessitates the Article 7 requirement that IP mechanisms balance members’ rights and obligations be read alongside the Article 8 principles, which vest members with the right to prioritize their national public interests.²⁹

In light of Articles 7 and 8 of TRIPS, the *effectiveness* of a plant protection regime established under Article 27 must be judged by its ability to accommodate local and national welfare and economic goals. Such a reading of the *effectiveness* requirement fits more comfortably with the other sub-sections of Article 27, which provide that members *may* choose to protect biological or microbiological materials. Member flexibility to establish an *effective* system increases when using a

21. World Trade Organization, Ministerial Declaration of 14 Nov. 2001, ¶ 17, WT/MIN(01)/DEC/1, 41 I.L.M. 746 (2002) [hereinafter Doha Declaration].

22. *Id.* ¶ 19.

23. World Trade Organization, Declaration on the Trips Agreement and Public Health of 14 Nov. 2001, ¶ 5(a) WT/MIN(01)/DEC/2, 41 I.L.M. 755 (2002) (recognizing the correct interpretation of TRIPS includes the flexibility to enable countries to protect both intellectual property and the public health).

24. TRIPS, *supra* note 3, art. 7

25. *Id.*

26. *Id.*

27. *Id.* art. 8.

28. *Id.* (“Members may, in formulating or amending their laws and regulations, adopt measures necessary to protect public health and nutrition, and to promote the public interest in sectors of vital importance to their socioeconomic and technological development, provided that such measures are consistent with the provisions of this Agreement.”).

29. *See id.*

national yardstick. Therein, perhaps, lies the benefit of Article 27.3's use of the expression "*an effective sui generis*" system as opposed to *the* effective system.

For developing nations using a national yardstick, an *effective* system would provide adequate rewards to stimulate successful research and development of plant varieties without compromising national welfare goals.³⁰ While promoting agricultural trade is an important goal for developing nations, it generally trails behind the more imminent goal of food security. With such a national focus, a developing country can structure a regime "expressly reserving the right of a farmer who legitimately purchased protected seeds to save enough from her harvest to replant her fields the following season."³¹ Similarly, biodiversity protection and sustainable development of indigenous communities need not be sidelined to successfully implement TRIPS.³² The bottom line is that countries that associate over-emphasized breeders' rights with loss of genetic diversity and shifting agriculture trade from farmers to multinational corporations can structure a *sui generis* option that best serves their local needs.³³ Other countries, like developed nations, can fashion a system to promote breeders exclusively as a means to promote agricultural trade.

The effectiveness of the system will not be compromised by any one of the choices above, provided the system vests sufficient protection. The system's sufficiency lies in providing breeders' rights without sidelining farmers or compromising national priorities.³⁴ Unlike the TRIPS patent regime, whose ability to cater to individual national goals remains questionable, the inbuilt flexibility in the *sui generis* alternative in Article 27.3 allows each country to structure unique plant protection regimes. In doing so, all nations have to appreciate that both over-protection and under-protection detrimentally affect trade, and would therefore fail the sufficiency test. This is because over-protection of breeders' rights would affect trade in developing nations and could lead to food security issues if farmers are sidelined.³⁵ At the same time, inadequate protection of breeders' rights can also erode the incentive to inno-

30. Paul J. Heald, *Mowing the Playing Field: Addressing Information Distortion and Asymmetry in the TRIPS Game*, 88 MINN. L. REV. 249, 286 (2003).

31. Heald, *supra* note 30, at 287.

32. GRAIN Briefing *supra* note 9.

33. Press Release, Gene Campaign, *Oppose UPOV! Save Farmers!*, <http://genecampaign.org/Publication/FreePublication/OPPOSEUPOV!SAVEFARMERS!.pdf>.

34. Press Release, United Nations Conference on Trade and Development, *New Treaty Preserves Global Food Security and Strengthens Farmers' Rights: UNCTAD Meeting Discusses Implications*, available at http://r0.unctad.org/trade_env/test1/meetings/plants/pressrelease2itpgrfa.doc (last visited Oct. 15, 2007).

35. The expression that "farmers would be sidelined" does not mean that farmers would leave their land idle. See generally *Impact of PVP Laws: Findings from some of the few studies conducted*, GRAIN Document, 2002, available at, <http://grain.org/docs/pvp-laws-impact-02-02-en.pdf>. (highlighting statistics from developed nations indicating that corporate breeders tend to use the protection regime more effectively). Instead, the protection regime would result in increased dependence on breeders, thus, sidelining the current role of farmers in developing nations.

vate.³⁶ After all, the importance of innovative plant breeding cannot be discounted in addressing food security issues.

Viewed from this angle, out of the menu of offerings found under Article 27.3 of TRIPS, a *sui generis* regime creates the ability to associate national welfare requirements with plant protection – an association otherwise lacking in the formal patent mechanism.³⁷ It is because of this benefit that several developing nations have chosen to satisfy their TRIPS obligations via *sui generis* systems.³⁸ As of March 2000, twenty-one out of forty-seven developing country members of WTO had introduced a *sui generis* form of plant variety protection.³⁹

II. THE EFFECTIVENESS OF THE UPOV REGIME

Historically, the genesis of UPOV can be traced to the breeding industry. In the early 1900s, the breeding industry furthered the idea of PBRs and lobbied for enhanced protection in exchange for quality of seeds.⁴⁰ Although Europe witnessed a strong sentiment against plant variety protection for fear of creating monopolization over food, national certification schemes provided for breeders' rights.⁴¹ Meanwhile, at the invitation of the French government, twelve western European nations met to agree on a unified mechanism to promote seed trade.⁴² Protecting plant varieties, the signatories envisioned, would prevent rather than promote monopolization over new plant varieties.⁴³ Consequently, the national certification schemes for providing breeders' rights were integrated into UPOV in 1961, with the specific objective of encouraging private sector commercial breeding.⁴⁴ Although UPOV originally attempted to distinguish itself from patents due to the European sentiment against patenting plant varieties, the UPOV conventions have been styled akin to the patent regimes and based on Western IP philosophy to provide incentives for long-term breeding activities.⁴⁵

36. Jim Chen & Drew Kershen, LAW, AGRICULTURE, AND BIOTECHNOLOGY, 63 (2005) ("[W]hen a subsequent user of agricultural technology developed by another simply applies it without paying the inventor *and* without enhancing the technology we can easily perceive how this sort of expropriation could erode incentives to develop technology.").

37. See generally David Vaver, *Invention in Patent Law: A Review and a Modest Proposal*, 11 INT'L J.L. & INFO. TECH. 286, 293 (2003) (highlighting some of the flexibilities under TRIPS article 27.3).

38. GRAIN briefing, *supra* note 9.

39. *Id.*

40. See Andre Heitz, *The History of the UPOV Convention and the Rationale for Plant Breeders' Rights*, 1991 Seminar on the Nature and Rationale for the Protection of Plant Varieties Under the UPOV Convention 25–26 (1994).

41. See JUSTICE RAJAGOPALA AYYANGAR, GOVERNMENT OF INDIA, REPORT ON THE REVISION OF THE PATENTS LAW 1–8 (1959) (quoting Lord Parker's address to the Chartered Institute of Patent Agents).

42. Heitz, *supra* note 40, at 33.

43. Philippe Cullet, *Plant Variety Protection in Africa: Towards Compliance with the TRIPS Agreement*, 45 J.AFRICAN L. 97, 99 (2001); see also Heitz, *supra* note 40, at 34.

44. UPOV, *supra* note 8; see also Press Release, Action Aid, *Plant breeders' rights and food security*, (Mar. 2000).

45. Remigius N. Nwabueze, *Ethnopharmacology, Patents and the Politics of Plants' Genetic Resources*, 11

The UPOV Convention, for instance, sought to promote "equity between breeders, authors and inventors" in order to develop seed trade.⁴⁶ To date, UPOV retains its original quality as an instrument of the breeders. The subsequent revisions of the Convention in 1978 and later in 1991 increased the scope of breeders' rights.⁴⁷ UPOV's bias towards breeders, however, has resulted in developing nations' skepticism against adopting the model as the choice *sui generis* system.⁴⁸

UPOV's bias towards breeders does not affect its stature as a model *sui generis* system. Several developed nations prefer to fashion a *sui generis* regime of plant protection sympathetic to breeders. However, the 1) low standards for eligibility; 2) excessive rights for breeders; and 3) inadequate exceptions to breeders' rights, discussed below, cause the 1991 UPOV model to provide insufficient and imbalanced protection. Consequently, the following section asserts that the 1991 UPOV model fails the *effectiveness* test of Article 27.3 of TRIPS.

A. ELIGIBILITY FOR PROTECTION

UPOV vests breeders' rights over uniform, stable, new, and distinct varieties.⁴⁹ Each of the eligibility requirements, detailed below, are based on exactly the same premise as IP rights, but have a lower threshold for protection. The low standard for eligibility, the following discussion argues, can result in vesting rights over miniscule innovations that can potentially shift plants in the public domain to the private domain.

1. UPOV's Novelty Requirements:

Article 6 of UPOV deems a variety as "new," if, "at the date of filing of the application for a breeders' right, propagating or harvested material of the variety has not been *sold* or *otherwise disposed of to others*, . . . by or with the consent of the breeder, for purposes of exploitation of the variety."⁵⁰ Prior sale or disposal of the application material is the standard for determining novelty of the application material. For instance, the standard excludes public knowledge, prior cultivation, and limited publication from affecting novelty. The standard for novelty in UPOV tracks the same standard for patentability of inventions. Hence, the

CARDOZO J. INT'L & COMP. L. 585, 610 (2003).

46. Heitz, *supra* note 40, at 34.

47. UPOV, *supra* note 8; see generally UPOV Conventions of 1961 and 1978, <http://www.upov.org/en/publications/conventions/index.html>.

48. Press Release, GRAIN, *Beyond UPOV: Examples of developing countries preparing non-UPOV "sui generis" plant variety protection schemes for compliance with TRIPS*, (July, 1999) <http://www.grain.org/briefings/?id=127>.

49. UPOV, *supra* note 8.

50. *Id.* at art. 6. The application material should not be sold with the breeder's consent in the country of application for one year before the date of application, or four years in any other country.

standard is limited to sale or disposal in territory—plants that have not been sold or disposed of would still be considered *new* even though the plant has been subject to activities like publication that do not make the plant novel in common parlance.⁵¹

Similarly, farmers' exchanging seeds for non-commercial or experimental purposes will not defeat novelty, since public knowledge of a variety does not preclude classifying a variety as new.⁵² To that extent, known varieties may still become eligible for protection as new. That is, UPOV leaves open the possibility for commonly cultivated plants in remote parts of the world to be deemed "new," provided they have never been disposed of or sold, because prior cultivation does not defeat novelty.⁵³ For example, Plant T is a commonly found herb in India (like Tulsi).⁵⁴ Owing to its abundant availability, Plant T is rarely sold but it is commonly found in most backyards.⁵⁵ Because of local faiths and beliefs, assume that the leaves of Plant T are also commonly exchanged between people. Nevertheless, under UPOV, Plant T plant may qualify as new (assuming that Plant T has not been sold or disposed of and the species is yet unclassified).⁵⁶ The bottom line is, novelty may not be barred under UPOV for well-known plants that are commonly exchanged between people, unless the exchange fits within the definition of sale or disposal (and the species has been classified). Moreover, an existing variety may qualify as new, where a country extends UPOV protection to a genus or species covering that variety for the first time, even if it has been sold one year before the date of application in the country of application, or before four years in any other country.⁵⁷ Instead of contributing towards innovation in plant breeding, the diluted novelty requirements could potentially result in plants in the public domain clearing the novelty threshold. In order to be protectable,

51. UPOV, *supra* note 8, art 6 (specifying that on the date of application the subject matter sought to be protected should not have been "sold or otherwise disposed of" in the territory of the Contracting Party earlier than one year before that date and (ii) in other territories earlier than four years or, in the case of trees or of vines, earlier than six years before the said date).

52. Mark Hanning, *An Examination of the Possibility to Secure Intellectual Property Rights for Plant Genetic Resources Developed by Indigenous Peoples of the NAFTA States: Domestic Legislation Under the International Convention for the Protection of New Plant Varieties*, 13 ARIZ. J. INT'L & COMP. L. 175, 235 (2004).

53. See UPOV, *supra* note 8.

54. The term 'Tulsi' includes a large number of species in multiple genuses, including "Shyama Tulsi, Rama Tulsi, Karpoora Tulsi, Cheeni Tulsi and Mou Tulsi." Because the UPOV system of registration occurs at the species level, Tulsi is not, per se, protectable. The use of Tulsi as an example is limited to the proposition that it is a commonly found herb. Email from Dr. S. Nagarajan, Director-General, PPRVA, India to author (September 1, 2007) (on file with author).

55. *Id.*

56. Tulsi can now be found in flower markets in India, which would fall within the novelty threshold under Article 6 of UPOV. Email from Dr. N. S. Gopalakrishnan, Cochin University, Kerala, India to authors (October 20, 2006) (on file with authors).

57. UPOV, *supra* note 8, art. 6(2); see also Remigius N. Nwabueze, *Ethnopharmacology, Patents and the Politics of Plants' Genetic Resources*, 11 CARDOZO J. INT'L & COMP. L. 585, 615 (2003).

such new varieties should clear the other requirements for protection.

2. UPOV's Distinctiveness Threshold

A uniform and stable variety fulfilling the novelty test must be distinctive to become eligible for protection. All plants belonging to a specific genotype and possessing characteristics of that genotype fall within the definition of a variety.

Under Article 7 of UPOV, a variety is distinct if "it is clearly distinguishable from any other variety whose existence is a matter of common knowledge at the time of filing the application."⁵⁸ Distinguishing the application material from another "variety whose existence is a matter of common knowledge" determines distinctiveness.⁵⁹ Under Article 14 of UPOV, a variety is a matter of common knowledge if it has been the subject "of an application for the granting of a breeders' right" or "has been entered in the official register of varieties, in any country."⁶⁰ The Examination Guidelines released by the UPOV Secretariat in 2002 specify that the filing of an application for the grant of a breeders' right renders that variety a matter of common knowledge if the application leads to a grant of a breeders' right.⁶¹ Common knowledge can also be established from commercialization or a publication with a *detailed description* of the variety.⁶² What would amount to a detailed description is very unclear and is left undefined. The important aspect to note is that common knowledge of application material (or application variety) is inconsequential for a finding of distinctiveness or novelty. Application materials have to be compared with *varieties in common knowledge* (i.e., registered or published) in order to pass the distinctiveness bar. In effect, the application would fail the distinctiveness test only if the application material is indistinguishable from a registered or published variety. Thus, application materials (even those that are themselves commonly known) can pass the test of distinctiveness provided they are distinguishable from any other variety that is *a matter of common knowledge*. Similarly, application materials can qualify as distinct even if they are indistinguishable from well-known or commonly cultivated materials that are not officially registered. Both commonly cultivated and well-known varieties that are indistinguishable from other widely known species can qualify as "distinct," so long as close cousins of the variety do not fall within the statutory definition of *commonly known* by the process of registry or by application for breeders' rights.

58. *Id.* art. 7.

59. *Id.*

60. *Id.* art. 14.

61. General Introduction to the Examination of Distinctness, Uniformity, and Stability, and the Development of Harmonized Descriptions of New Varieties of Plants, TG/1/3, § 5.2.2.1 (Apr. 19, 2002) [hereinafter UPOV Guidelines].

62. *Id.* (emphasis added).

The distinctiveness requirement in UPOV operates as a highly diluted version of the non-obviousness requirements of the utility patent system.⁶³ For instance, Plant T from the above example will also qualify as “distinctive” under Article 7 of UPOV, so long as it is distinguishable from a variety for which an application has been successfully made or has been entered in the official register. Plant T will pass the distinctiveness bar even if it is indistinguishable from a commonly cultivated and well-known Plant B, provided that no application for protection or registry has been successfully made for Plant B. In essence, common knowledge, use, or even repeated cultivation of the application material is not an impediment for qualifying as “new” and “distinct” under UPOV.

Even with this low standard of distinctiveness, the Examination Guidelines specify that a systematic individual comparison with all varieties in common knowledge may not be required.⁶⁴ For example, the 2002 Guidelines specify that, where a candidate variety is sufficiently different in its characteristics, it is unnecessary for a systematic individual comparison with varieties in that group to determine distinctiveness of the candidate variety.⁶⁵ It is adequate if just one quality distinguishes the application material from similar varieties of the same genus or species.⁶⁶

The low standard of novelty and distinctiveness may result in both well-known varieties and those trivially different from them being considered distinct. When read with the standard of novelty, a commonly cultivated and well-known variety can be novel and distinct under UPOV, as long as it has not been sold or disposed of within the statutory periods, and is distinguishable from other varieties that appear in a registry or for which an application has been made. UPOV notwithstanding, attempts to monopolize well-known varieties by using various IP means, particularly patents, as tools, has already resulted in rampant erosion of the public domain. The patenting of Ayahuasca, a brew known as the yage or Yaje in Colombia, Ecuador, Peru, and Brazil, prepared from a plant called the *vine banisteriopsis caapi* serves as an example. U.S. Plant Patent No. 5751 and 5752 (issued on June 17, 1986) on Ayahuasca to Loren Miller of the International Plant Medicine Corporation was revoked in 1999.⁶⁷ Additional examples, like the

63. 35 U.S.C. § 103 (requiring patent applications to determine the “differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains”).

64. *Id.* § 5.3.1.1.

65. *Id.*

66. Nwabueze, *supra* note 57, at 615.

67. See generally ESTELLE DORIS LONG & ANTONY D'AMANTO, INTERNATIONAL INTELLECTUAL PROPERTY 1056 (2000). See Glenn M. Wiser, *PTO Rejection of the Ayahuasca Patent Claim*, Center For International Environmental Law (Nov. 1999), available at <http://www.ciel.org/Biodiversity/ptorejection.html> (noting that a request for reexamination was filed on March 30, 1999). The PTO rejected Miller's patent claim in an Office Action dated November 3, 1999 under the 35 U.S.C. § 102(b). Section 102(b) prohibits, *inter alia*, the issuance of a patent when the invention was patented or described in a printed publication more than one year prior to the date of patent application. The rejection was based on the Herbarium sheets from the Field Museum in Chicago

patents on turmeric and neem, plants both used in India for several years, substantiate the need to close any loopholes that facilitate any form of protection for varieties in the public domain.

The disadvantage with the low standard of distinctiveness is that UPOV can elevate miniscule innovations to the level of an invention. When read with the lowered novelty standards, UPOV can dangerously promote protection for non-innovation, as well as for miniscule innovations. Importantly, protecting miniscule innovations unjustly enriches the breeders by depleting prior art, which, in this case, is biodiversity material. The danger, as already mentioned, is that it could result in appropriating genetic material from the public domain and protecting it as premium innovation. Consequently, countries that seek to prioritize biodiversity protection would have to tailor a regime with higher standards of novelty and distinctiveness than those created in the 1991 UPOV.

3. UPOV's Uniformity & Stability Requirements

A variety that is novel and distinct should also be "uniform" and "stable" in order to qualify for protection.⁶⁸ A variety is uniform if, "subject to the variation that may be expected from the particular features of its propagation, it is sufficiently uniform in its relevant characteristics."⁶⁹ The Guidelines add that UPOV links this uniformity requirement to the particular features of a variety's propagation.⁷⁰ After successive production or propagation, if a new variety retains its essential characteristics, then it is taken to be stable.⁷¹ In effect, uniformity is achieved if all plants of the same variety possess identical characteristics, and stability is achieved if these characteristics remain unchanged during propagation. The criterion of uniformity and stability have been included to ensure reproducibility of later generations.

On the other hand, UPOV's encouragement for protecting stable and uniform varieties can undermine genetic diversity by promoting monocultures.. Hence, a UPOV based legislation would be a misfit for countries whose national objectives include sustainable use of biodiversity or equitable benefit sharing.⁷² In fact, developing country signatories of the Convention on Biological Diversity (CBD)⁷³

containing specimens of *B. caapi*. The Herbarium sheets were recognized as 'printed publications' for the purpose of determining patentability. See also Bob van Dillen & Maura Leen, *Biopatenting and the Threat of Food Security—A Christian and Development Perspective* (2000), <http://www.cidse.org/pubs/tg1ppcon.htm>.

68. UPOV, *supra* note 8, art. 8-9.

69. *Id.* art. 8.

70. UPOV Guidelines, *supra* note 61, § 6.3.

71. Nwabueze, *supra* note 57, at 615.

72. Cary Fowler, *By Policy or Law? The Challenge of Determining the Status and Future of Agrobiodiversity*, 3 J. TECH. L. & POL'Y 1, 23 (1997).

73. Convention on Biological Diversity, June 5, 1992, 1760 U.N.T.S. 79 [hereinafter CBD]. The CBD was signed at the United Nation's Conference on Environment and Development in 1992 and came into force on

highlight UPOV's inconsistency with the CBD objectives of conserving biological diversity.⁷⁴ For instance, Article 15 of the CBD requires "sharing in a fair and equitable way the results of research and development and the benefits arising from the commercial and other utilization of genetic resources."⁷⁵ Embracing UPOV would run counter to the CBD doctrine of equitable sharing of the technology and traditional knowledge of indigenous or local communities.⁷⁶ Furthermore, genetic diversity is also important for farmers who depend on the stability and dependability of production offered by genetic heterogeneity.⁷⁷ Other critics point out that uniformity could result in vulnerability to pests.⁷⁸ While the IP of plant breeders should be protected, such protection need not be made to the detriment of traditional farming techniques.⁷⁹ Traditional farming promotes adaptability of crops to many different conditions by selecting seeds tailored to many different microenvironments.⁸⁰ Selection diversifies the plant varieties available in a given area. Essentially, the criticism is that UPOV promotes commercially profitable varieties, but the resulting loss of agricultural diversity affects socially valuable varieties.⁸¹ Ultimately, UPOV's step-motherly treatment towards farmers leaves the core concerns of developing nations unaddressed.

4. UPOV'S Exaggerated Scope of Breeders' Rights

The low thresholds for eligibility standards in UPOV are coupled with

December 29, 1993. The CBD addresses the need for an international framework to beneficially exploit and conserve biodiversity. Thus, the CBD is the international treaty conceived as a tool to promote sustainable development. The Convention has three important objectives: first, the conservation of biological diversity; second, promoting sustainable use of biodiversity components; and, lastly, sharing benefits from biodiversity resources in exchange for transfer of technology.

74. Council for Trade-Related Aspects of Intellectual Property Rights, *Note by the Secretariat: Review of the Provisions of Article 27.3(B) Summary of Issues Raised and Points Made*, IP/C/W/369, ¶ 54 (Aug. 8, 2002).

75. CBD, *supra* note 73, art. 15.7.

76. *Id.* art. 8(j) ("Subject to its national legislation [each party shall] respect, preserve, and maintain knowledge, innovations and practices of indigenous or local communities embodying traditional lifestyles relevant for the conservation and sustainable use of biological diversity and promise their wider application with the approval and involvement of the holders of such knowledge, innovations and practices and encourage the equitable sharing of the benefits arising from the utilization of such knowledge, innovations and practices.").

77. Select Committee on Environmental Audit, Appendices to the Minutes of Evidence, 1999-2000, H.C. 45, Appendix 7; *see also Beyond UPOV*, *supra* note 48; *see also* John Linarelli, *Treaty Governance, Intellectual Property and Biodiversity*, 6 UNIV. OF LA VERNE ENVIRO. L. REV. 21, 26 (2004).

78. *See generally* Thomas Peterson & Bryony Bonning, *Trait Protection System: A Case Study*, <http://www.bioethics.iastate.edu/classroom/traitprotection.html>. *See also* George Van Esbroeck & Daryl T. Bowman, *Cotton Germplasm Diversity and Its Importance to Cultivar Development*, 2 JOURNAL OF COTTON SCIENCE 121 (1998), available at <http://www.cotton.org/journal/1998-02/3/upload/jcs02-121.pdf>.

79. CBD, *supra* note 73, art. 8(j).

80. Naomi Roht-Arriaza, *Of Seeds and Shamans: The Appropriation of the Scientific and Technical Knowledge of Indigenous and Local Communities*, 17 MICH. J. INT'L L. 919, 941 (1996).

81. Charles R. McManis, *The Interface between International Intellectual Property and Environmental Protection: Biodiversity and Biotechnology*, 76 WASH. U. L.Q. 255, 276 (1998).

excessive rights for breeders. Breeders' rights, by virtue of Article 14(5)(a) of UPOV, extend to both the protected variety and "varieties not clearly distinguishable" from the protected variety.⁸² The rights conferred in the article afford breeders rights over varieties that are not clearly distinguishable from the protected and harvested materials. Further, Article 14(5)(b) extends breeders' rights to "essentially derived varieties."⁸³ "Essentially derived varieties" are varieties derived either from the protected variety, or from another variety that is predominantly derived from the initial protected variety, and are *clearly distinguishable* from the initial variety.⁸⁴ Basically, essentially derived varieties are the first or second generation derivatives from the protected varieties. Thus, breeders' rights extend to varieties that are not clearly distinguishable (by virtue of Article 14(5)(a)) as well as varieties that are clearly distinguishable (when read with Article 14(5)(b)) derivatives of the protected variety.⁸⁵

The only meaningful exception in UPOV is the use of a protected variety for experimentation. But, even here, if the experimentation on a protected variety results in another variety, the breeder of the protected variety has rights over the resulting variety, even if it is clearly distinguishable from the protected variety. Assume, for example, that Farmer, using the personal experimentation allowance under Article 15, derives Berry Y, which is not clearly distinguishable from the protected variety, Fruit X. Then, Farmer derives Pea Z from Berry Y. Even if Pea Z is clearly distinguishable from both Fruit X and Berry Y, breeders' rights over Fruit X under UPOV extend to both Berry Y and Pea Z. Thus, UPOV allows breeders to claim rights over the experimental varieties of other farmers and breeders, even where the result is clearly distinguishable from the protected variety.⁸⁶

C. UPOV'S IMBALANCED FARMERS' & BREEDERS' RIGHTS

1. Farmer & Researcher Exceptions

UPOV's biggest flaw is the lack of any recognition of farmers' rights. In countries with large agrarian societies, introducing a UPOV-type legislation would amount to statutory marginalization of farmers. Two important issues arise with reference to farmers' rights. The first relates to traditional rights of farmers, like the right to re-sow, applicable to new varieties. The second relates to the rights of farmers who provide source information which results in a new and protected variety. Both issues are not fully addressed in UPOV. Instead, UPOV, is fashioned as a mechanism for breeders' rights, and therefore treats "rights" of other players in agricultural trade as exceptions to the breeders' right.⁸⁷ Thus,

82. UPOV, *supra* note 8, art. 14, § 5(a).

83. *Id.* § 5(b).

84. *Id.*

85. *Id.* art. 15, § 1(ii).

86. *See id.* art. 14.

87. *See generally* Robyn Ott, *Protection of Plant Varieties and the Farmer's Rights Act*, 2 OKLA. J. L. &

farmers' rights are outlined as part of the exceptions to breeders' rights under Article 15 of UPOV, which discusses two types of exceptions: compulsory and optional.⁸⁸ Compulsory exceptions include acts done (by farmers or researchers) for private, non-commercial purposes and experimental purposes. Breeders, however, can override these exceptions by conditioning initial access to the protected variety on forfeiture of farmers' rights. In developing countries where literacy among the farming community is limited, it can result in farmers forfeiting more rights than they intend to. Unfortunately, the forfeitable rights are important to allow farmers and farming communities to maintain agro-biodiversity conservation and innovation at local levels.⁸⁹

Furthermore, Article 15 of UPOV limits the ability of governments to provide for farmers' rights. Governments may provide farmers' rights only 'within reasonable limits and subject to the safeguarding of the breeder's legitimate interests.'⁹⁰ These limitations prevent governments from making concessions to farmers that would effectively balance welfare with trade. In failing to adequately provide for balancing welfare and trade, UPOV defies the basic reason why developing countries embraced a *sui generis* system. Nowhere is such a balance more important than in agrarian third world countries where farmers generally belong to the poorer societal classes.

2. Public Interest Exception

Article 17 of UPOV 1991 provides a weak public interest exception. The term "public interest" is not defined, nor does the treaty indicate who determines when the "public interest" is affected. Defining the term "public interest" will allow countries to know when they can benefit from the applicable flexibility, and thus avoid potential disagreements between members on the question of which situations warrant the use of the exception.⁹¹ Whether a welfare issue detrimentally affecting farmers *per se* qualifies as a public interest requirement remains unresolved, even assuming a substantial population is dependant on agriculture. Determining the limitations on breeders' rights in "public interest" using clear definitions is crucial to avoiding the maladies that developing nations previously faced with respect to pharmaceutical patents.⁹² Based on the obstacles that the

TECH. 14 (2004).

88. UPOV, *supra* note 8, art. 15.

89. Dr. Philippe Cullet & Radhika Kolluru, *Plant Variety Protection and Farmers' Rights—Toward a Broader Understanding*, 24 DELHI LAW REVIEW 41, 55 (2003), available at <http://www.ielrc.org/content/a0304.pdf>.

90. UPOV, *supra* note 8, art. 15, § 2.

91. Critiques assert that allowing brown-bagging along with adequate public interest exception would result in breeders being unable to recoup investments. When a public interest exception is applied, the underlying assumption is that the public's need for the innovation (the seed in this case) outweighs the breeder's rights to monopoly profits. See e.g. *infra* Part VII, (discussing compulsory licensing for pharmaceuticals).

92. Article 31 of TRIPS allowed developing nations the right to compulsorily license patented medication.

pharmaceutical patents dispute continues to present to developing nations, these nations have a potent interest in demanding term clarifications under UPOV.⁹³

UPOV's biggest deficiency is its inability to move away from the patent model. The IP style protection tends to reflect a bias in favor of large-scale commercial agriculture.⁹⁴ The model in UPOV over-appreciates the role of breeders, which could disadvantage farmers, biodiversity management, and traditional knowledge protection.⁹⁵ Styled as a softer patent regime, the 1991 UPOV represents a shopping list of what farmer and local communities do not want.⁹⁶ For instance, UPOV does not recognize saving (re-sowing) protected varieties for re-use as an absolute right and allows contracting parties to limit re-sowing.⁹⁷

In any case, it would be unwise for developing nations to embrace a model whose effectiveness is at best questionable, especially when there is a choice in structuring a national regime. Therefore, developing nations are well advised to establish a self-serving *sui generis* regime that treads a balanced approach to plant protection.

III. INDIA'S PLANT VARIETY PROTECTION REGIME

After independence, the government of India adopted a model of confining plant breeding to the public sector to address national food security issues.⁹⁸ The model succeeded when at the end of the 1970s, India graduated from being an

But, in 1997, when the South African government attempted to use the Article 31 exception because of a threat to public health from AIDS, developed nations objected. See generally Srividhya Ragavan, *Can't We All Get Along – Case For a Workable Patent Model*, 35 ARIZ. ST. L. J. 117 (2003) (discussing the issues arising therefrom.)

93. See generally Srividhya Ragavan, *To Sow or Not to Sow: Dilemmas in Creating New Rights in Food*, AGRICULTURAL BIOTECHNOLOGY AND INTELLECTUAL PROPERTY: SEEDS OF CHANGE 318, 337-338 (J.Kesan ed., 2007).

94. Cullet, *supra* note 43, at 100 (highlighting that in the 1991 version of UPOV, the distinction between PBRs and patents is blurred). See also Nwabueze, *supra* note 57, (highlighting that UPOV provides monopoly rights that are more watered-down than patents but are based on exactly the same premises).

95. See Susan K. Sell, *Industry Strategies for Intellectual Property and Trade: The Quest for TRIPS, and Post-TRIPS Strategies*, 10 CARDOZO J. INT'L & COMP. L. 79, 106 (2002) (explaining that UPOV "is very generous to the corporate plant breeder and sharply curtails farmers' rights.").

96. Gaia Foundation & GRAIN, *Global Trade and Biodiversity in Conflict*, Issue No. 2, May 1998, www.grain.org/briefings/?id=1.

97. See UPOV, *supra* note 8, art. 15(2) (outlining that each Contracting Party may, "within reasonable limits and subject to the safeguarding of the legitimate interests of the breeder, . . . permit farmers to [protected seeds] for propagating purposes, on their own holdings." The Diplomatic Conference of UPOV recommends that this exception "should not be read so as to be intended to open the possibility of extending the practice commonly called 'farmer's privilege'"); see *id.*, "Recommendation Relating to Article 15(2)" (recommending that this exception "should not be read so as to be intended to open the possibility of extending the practice commonly called 'farmer's privilege'").

98. Dr. N.S. Gopalakrishnan, *An "Effective" Sui Generis Law to Protect Plant Varieties and Farmers' Rights in India*, 4 J. OF WORLD INTELL. PROP. 157, 158 (2002).

importer to achieving self-sufficiency in food.⁹⁹

India's move toward promoting agricultural trade was partly prompted by the entry of foreign seed corporations into the Indian market in the early 1980s, which gave rise to demands for IP protection.¹⁰⁰ Thus, the Protection of Plant Varieties and Farmers' Rights Act (PPVFA) is generally perceived as an outcome of the pressures from India's membership in the WTO, as well as entry of foreign corporations into the market.¹⁰¹ India, however, chose a *sui generis* structure to protect plant varieties with a view to balancing the interests of all players in the national agricultural trade. The following part examines whether India's PPVFA fulfills the *effectiveness* test under Article 27.3 of TRIPS. In doing so, the paper also examines the Seeds Bill that was tabled in the parliament in 2005. The Bill's highlight may be its notoriety due to allegations that it attempted to dilute the benefits of the PPVFA.

A. THE *EFFECTIVENESS* OF INDIA'S PROTECTION OF PLANT VARIETIES & THE 2004 FARMERS' RIGHTS ACT

The central tenet of the PPVFA is to address India's national concerns about protecting the rights of traditional farming communities, while at the same time promoting plant breeding by vesting IP protection.¹⁰² Thus, the PPVFA lumps plant varieties into three protectable categories: (a) New Varieties, (b) Extant varieties, which refer to existing varieties discovered for the first time, and (c) Farmers' Varieties, based on community property concepts.¹⁰³ The *effectiveness* of the PPVFA can be examined by understanding the layers of protection and determining whether the deviations from UPOV falls within the ambit of TRIPS flexibilities.

1. New Variety

A variety is eligible for protection provided it is novel, distinct, uniform, and stable.¹⁰⁴ The requirement for novelty is similar to UPOV. Varieties not "sold or otherwise disposed of" in India more than a year prior to filing, or outside India for more than four or six years, depending on the type of plant, can pass the novelty test.¹⁰⁵ Becoming "a matter of common knowledge" on the application date, by methods other than by sale or disposal does not affect the novelty for protecting new varieties.¹⁰⁶ Like novelty, the definitions of distinctiveness,

99. *India—Economic Development, Evolution of Policy*, Sept. 1995, <http://www.country-data.com/cgi-bin/query/r-6093.html>.

100. *Id.*

101. The Protection of Plant Varieties and Farmers' Rights Act, 1999, No. 123, Acts of Parliament, 2000; PPVFA, *supra* note 4.

102. See PPVFA, *supra* note 4, at Preamble.

103. PPVFA, *supra* note 4, § 15(2).

104. *Id.* § 15.

105. PPVFA, *supra* note 4, § 15(3)(a).

106. *Id.* § 15 (3) proviso.

uniformity and stability also track UPOV.¹⁰⁷ Any breeder, farmer, group, or community of farmers may apply for registration of a new variety.¹⁰⁸

The distinction of PPVFA lies in the registration regime, which enables protection for new varieties while at the same time recognizing the role of local farmers. For instance, every application for registration must include a denomination of the variety and describe (1) the geographical origin of the material, and (2) all information regarding the contribution of the farmer, community, or organization in the development of the variety.¹⁰⁹ Further, the application must state that all genetic or parental material used to develop the variety has been lawfully acquired.¹¹⁰ Moreover, section 40 requires the breeder to disclose information "regarding the use of genetic material conserved by any tribal or rural families in the breeding or development of such [new] variety."¹¹¹ The information in the application is meant to facilitate benefit sharing, a system discussed below, introduced to protect farmers rights. Unlike UPOV, the PPVFA bears a set of public interest exceptions to registration of a new variety. A new variety, for instance, becomes unregistrable if it is likely to deceive the public, hurt the religious sentiments of any class or section of Indians, or cause confusion regarding the variety's identity, or is not different from every denomination which designates a variety of the same botanical species or of a closely related species registered under the Act.¹¹²

While the farmer's role is protected by the benefit sharing arrangement, the breeders' rights are protected using a combination of exclusive rights and harsh penalties for infringement. The owner-breeder retains exclusive commercial rights over the variety, once registered, including licensing, production, sales, marketing, distribution, and importing and exporting.¹¹³ The statute tries to deter infringement by providing stringent penalties, at rupees 50,000 (roughly US \$1400) or imprisonment for a minimum of three months, which is also meant to offer breeders the incentive to innovate without fear of infringement.¹¹⁴

2. Extant Variety

The introduction of farmers' variety and extant variety is meant to balance breeders' rights with rights of other players in agricultural trade. The *extant variety* typology itself was introduced to protect traditional knowledge and indigenous rights.¹¹⁵ The extant variety register serves as a compilation of

107. *Id.* § 15.

108. *Id.* § 16(1)(d).

109. *Id.* § 18(1)(e).

110. *Id.* § 18(1)(h).

111. *Id.* § 40.

112. *Id.* § 15(4).

113. *Id.* § 28.

114. *Id.* § 70.

115. *Id.* § 14(b).

matters known and existing in the public domain. In essence, an extant variety encompasses a farmers' variety, or a variety about which there is common knowledge, or a variety in the public domain, as well as any variety included under section 5 of the Seeds Act.¹¹⁶

Considering that the extant variety register is a log of materials in the public domain, the registration requirements are not rigorous. For instance, extant varieties need not be novel, although the requirements of distinctiveness, uniformity, and stability are regulated by administrative notifications.¹¹⁷ By making farmers' variety a subset of extant variety, the PPVFA encourages farmers to register varieties they have cultivated for years to ensure that they are not appropriated. The most important benefit is that registration or compilation of extant varieties creates a higher standard for distinctness and non-obviousness for registering "new" varieties. Thus, it prevents protection of miniscule innovations by breeders. To that extent, the PPVFA deviates from UPOV by creating a more rigorous mechanism to maintain the uniqueness of the protected varieties.

An extant variety may be registered by a breeder, farmer, a community of farmers, a university, or a public sector.¹¹⁸ Although a breeder can register an extant variety, he is not entitled to exclusive rights over the variety.¹¹⁹ Section 28 of the Act provides that the Government, as the owner of the extant varieties, enjoys the rights to determine their production, sale, marketability, distribution, importation or exportation.¹²⁰ The objective is to protect biodiversity by empowering the government to negotiate with entities that require biodiversity materials for creating biotechnology innovations. Interestingly, section 24 loosely creates the right to exploit an extant variety (biodiversity material), over specific applicants, for a term of up to 15 years from the date of publication.¹²¹ In doing so, it prevents any private acquisition of materials in the public domain. Taking the Ayahuasca example above,¹²² registering the plant would enable researchers to work with it, but would prevent a Loren Miller-type patent over the plant itself. Since any person can make an application for registration of an extant variety under section 16, it allows the government to grant rights to the applicant for exploiting the variety for a specified period. The disadvantage with the extant registration is two fold: First, imposing a term of protection for extant varieties creates the impression that matters in the public domain are not available in perpetuity. Second, allowing any third party to register an extant variety could presumably leave some species in the public domain unregistered. Plants that are

116. *Id.* § 2(j).

117. *Id.* § 15(2).

118. *Id.* § 14.

119. *Id.*, § 28.

120. *Id.*

121. *Id.*, § 24(6)(ii).

122. *See*, Long & D'Amanto, *supra* note 67.

not commercially usable or being used may never be registered, leaving the registry incomplete. In any case, it seems impossible to expect that the system would result in registration of all plants in the public domain.

3. Farmers' Variety

The PPVFA defines "farmers" from a community rights perspective as those who "cultivate crops by cultivating the land," and those who supervise cultivation directly or indirectly through other people, or anyone who "conserves and preserves, severally or *jointly*, with any other person . . . through selection and identification of their useful properties."¹²³

A "farmers' variety" is one "which has been traditionally cultivated and evolved by the farmers in their fields, or is a wild relative or land race of a variety about which the farmers possess the common knowledge."¹²⁴ The emphasis on common knowledge strengthens community rights—a concept ignored by UPOV. As far as determination of novelty and distinctiveness for registering a new variety is concerned, a variety becomes a matter of common knowledge only if it is protected or registered in any convention country.¹²⁵ All other forms of common knowledge may not defeat novelty or distinctiveness. For all other purposes (including for the definition of farmers variety), the term common knowledge has been left broadly undefined. Notably, even though the definition of novelty and distinctiveness track UPOV, the overall protection regime envisaged under the Act alleviates some of the concerns.

The manner of stylizing protection of farmers' variety reflects a keen sense of consideration for community and traditional rights by including provisions for benefit sharing, community compensation, immunity from prosecution for innocent infringement, and the creation of a Gene Fund to collect breeders' annual fees.¹²⁶ Each of the rights (discussed below), not only represents a deviation from UPOV, but also showcases rights contoured to suit unique national conditions.

Critics point out that separately categorizing a farmers' variety creates economic inefficiency in prosecuting claims for registration because farmers may be breeders and vice-versa.¹²⁷ However, while a farmer can be a breeder qualifying to register a new variety, a community of farmers that creates a new variety, for instance, will not qualify for registration of the breeders' variety. The breeders' variety is based on the western notion of IP rights. The important aspect of a farmers' variety is not to appease farmers, but to create community property

123. *Id.* § 2(k) (emphasis added).

124. *Id.* § 2(l).

125. *Id.* § 15(3)(a) proviso.

126. PPVFA, *supra* note 4, §§ 39-46.

127. Memorandum from Vasudha J. Mehta, ALG India Law Officer, *UPOV, India and the World—Common Knowledge and Uncommon Wisdom*, 2 (on file with author).

rights in contrast to the breeders' variety. The critics, however, may be vindicated when considering that farmers' variety is a subset of extant variety. While the extant variety encompasses everything in the public domain, farmers' variety is limited to materials traditionally cultivated by farmers or over which farmers possess common knowledge. To that extent, creating two different systems of registrations could result in operational issues in the future.

4. Other Deviations from UPOV

The most significant features of the PPVFA lie in areas where it deviates from UPOV. As discussed below, these deviations contribute toward increasing the effectiveness of PPVFA.

a. Protecting Biodiversity

The PPVFA emphasizes traditional farming practices to protect biodiversity. Farmers are encouraged under the statute to conserve and improve genetic land resources.¹²⁸ The statute establishes a Gene Fund to reward farmers whose existing variety or material is used as a source to create a new variety.¹²⁹ The Gene Fund is a common fund created by the Central Government for the benefit of the farmers.¹³⁰ Monies collected as royalties, funds collected towards benefit sharing, and other sums that become due to farmers will be credited into the Gene Fund.¹³¹ The Central government will use the fund towards "expenditures for supporting the conservation and sustainable use of genetic resources including in-situ and ex-situ collections and for strengthening the capability of the village Panchayats for carrying out such projects."¹³²

Moreover, if a farmer breeds a new variety, it would be subject to same levels of protection and obligations, like benefit sharing or community rights.¹³³ If a breeder derives an essentially derived variety from a farmer's variety, then the breeder of the protected variety needs the permission of the farmer or the community to commercialize the essentially derived variety.¹³⁴ The underlying assumption is that any efforts that result in benefit sharing should be used to encourage genetic diversity.¹³⁵ Thus, the statute promotes innovation while at the same time rewarding the farmers and protecting biodiversity.

128. See PPVFA, *supra* note 4, § 39 (outlining that a farmer engaged "in the conservation of genetic resources of land races and wild relatives of economic plants and their improvement through selection and preservation shall be entitled in the prescribed manner for recognition and reward from the Gene Fund").

129. *Id.* § 39.

130. *Id.* § 45.

131. *Id.* § 45(1)(a).

132. *Id.* § 45(2)(c).

133. *Id.* § 39(1).

134. *Id.* §§ 28(2), 43.

135. *Id.*

b. Right to Resow

The PPVFA's *sui generis* stamp is showcased by allowing farmers to retain their traditional right to save and re-use seeds from their harvests.¹³⁶ A farmer may "save, use, sow, re-sow, exchange, share or sell his produce" including non-branded seed, even if it is a protected variety.¹³⁷ With a view to facilitating the use of the right by farmers, section 18 further specifies that every application for a new variety be submitted along with an affidavit swearing that the protected variety does not contain any gene or gene sequence involving terminator technology.¹³⁸ The caveat to re-saving is that the farmer cannot use the breeder's brand name when reselling second generation produce.¹³⁹ While the objective is commendable, the poorly drafted language of the section can lead to misuse of the provision. For example, extant seed varieties or farmers' varieties, which can be re-sowed, can be branded to prevent reuse by farmers. Considering the high level of illiteracy, whether a farmer can differentiate between new varieties and extant varieties is unclear.

Termed sometimes as brown bagging, farmers' traditional right to reuse protected varieties for re-sowing has been controversial.¹⁴⁰ The 1991 UPOV does not *per se* recognize the general right to re-use protected seeds, as discussed in the previous section.¹⁴¹ Breeders insist that farmers re-using protected varieties take away a part of their rightful compensation for the second generation seeds. The breeders' lobby and the seed companies have opposed the right to re-sow on the grounds that it is contrary to principles of western IP systems.¹⁴² Farmers, on the other hand, treat re-sowing as their natural right.¹⁴³ Non-governmental

136. See Suman Sahai, India's Plant Variety Protection and Farmers' Rights Act, Bridges Comment, <http://iprsonline.org/ictsdocs/SahaiBridgesYear5N8Oct2001.pdf>.

137. PPVFA, *supra* note 4, § 39(1)(iv).

138. *Id.*, § 18.

139. *Id.* § 39(iv) ("[A] farmer shall be entitled to save, use, sow, resow, exchange, share or sell his farm produce including seed of a variety protected under this Act in the same manner as he was entitled before the coming into force of this Act: provided that the farmer shall not be entitled to sell branded seed of a variety protected under this Act").

140. Brown-bagging can comprise two different scenarios. The first is the unauthorized sale of seeds that are properly labeled, and genetically as-advertised. The second scenario is the case where seeds are sold under the brand name, but the seeds are genetically not what they are purported to be. This second type of brown-bagging often occurs when seed companies try to dispose of undesirable seeds in poorer markets and can potentially add to the problems of brown-bagging by introducing the element of unfair competition in addition to the infringement issue seen in scenario one. See Email from Dr. S. Nagarajan, Director-General, PPRVA, India to author (September 1, 2007) (on file with author); see also PPVFA, *supra* note 4, [Sec.] 26.

141. See *supra* note 8, Part II(3)(A).

142. See Mehta, *supra* note 127, at 2-3.

143. Unlike in developed nations where seed companies and corporate farmers own large tracts of farmland, most seed companies in India contract out seed production to small farmers who are then supervised by the seed company. The seed companies benefit from this arrangement because they are able to avoid the costs and risks of seed production and any tariffs associated with industrial production of seeds. Further, the small farmers are able to obtain subsidies from the government for many of the agricultural inputs, such as water and electricity,

organizations¹⁴⁴ (NGOs) like Gene Campaign assert that the right to resell is important for farmers to maintain their livelihoods and for nations to remain self-sufficient.¹⁴⁵ For instance, farmers account for 87% of Indian seed production.¹⁴⁶ Denying the right to resow would result in private corporations displacing farmers as the country's major seed producers. In countries like India where the farming population is considerable, it is important to make welfare exceptions to maintain the balance between trade and welfare. By introducing the right to brown bag, the PPVFA removes the most crippling impediment to introducing formal plant variety protection in developing nations. The exception represents a balance between fully allowing re-sowing on the one hand, and the UPOV position tending towards preventing brown-bagging altogether.

c. Community Rights

Another significant deviation from UPOV lies in introducing a right to community compensation in recognition of traditional knowledge contributions. Basic intellectual property textbooks explain the philosophy behind the western system by using the example of a researcher's invention resulting from cues provided by indigenous people, educating the researcher of healing properties of strange plants.¹⁴⁷ Western IP establishes that the indigenous people are entitled to no compensation either based on the Lockean philosophy (sweat of the brow) or the utilitarian philosophy that rewards the ultimate innovation.¹⁴⁸ Community property rights, unlike the western IP regime, allocate rights to the tribe, tribesman, or farmer as the case may be. Section 43 reflects community property philosophy by providing that "[b]reeders wanting to use farmers' varieties for creating essentially derived varieties cannot do so without the express permission of the farmers involved in the conservation of such varieties."¹⁴⁹ Thus, communities can stake a property claim against breeders if a new variety is derived from information or a contribution made by the local community.¹⁵⁰ If the communities' claim for compensation is established, the breeder must deposit

which would not be available to a corporate farm. In order to collect the seeds, the seed companies offer the farmers a price higher than the grain price for the seeds, which are then "cleaned, graded, greated, tested, bagged, and sold back, with a premium price." The fact that these small farmers are intimately involved with the production and development of seeds for the seed companies has led many of these farmers to assume that brown-bagging is acceptable and within their rights. Email from Dr. S. Nagarajan, Director-General, PPRVA, India to author (September 1, 2007) (on file with author).

144. NGO's are often the most effective voices for the concerns of ordinary people in the international arena, particularly at the United Nations.

145. Suman Sahai, *India's plant variety protection and Farmers' Rights Act, 2001*, CURRENT SCIENCE, Feb. 10, 2003, at 409.

146. *Id.*

147. PETER MENELL ET AL., INTELLECTUAL PROPERTY IN THE NEW TECHNOLOGICAL AGE (2003).

148. *Id.*, at 4-5.

149. Sahai, *supra* note 145.

150. PPVFA, *supra* note 4, § 41.

the compensation in the Gene Fund.¹⁵¹

d. Benefit Sharing

"Benefit sharing" refers to the concept of sharing a proportion of the benefits accruing to a breeder of a new variety with qualifying claimants who could be indigenous groups, individuals, or communities.¹⁵² The concept of benefit sharing is close to the community rights concept detailed above. The statute mandates that before registering any new variety, the statutory authority should invite claims for benefit sharing.¹⁵³ Persons or groups can respond based on two criteria: a) the extent and/or nature of use of genetic material in the development of the new variety, and b) the commercial utility and demand in the market of the new variety.¹⁵⁴ Only citizens of India or firms or organizations formed or established in India are eligible to claim benefits.¹⁵⁵

Some commentators claim that the benefit sharing rewards are disconnected from the farmers, and cumbersome to implement.¹⁵⁶ Critics assert that farmers may not be vigilant in applying for benefits considering social, economic, and educational conditions of the local communities.¹⁵⁷ Consequently, critics assert, communities will be left uncompensated for breeder appropriations. Moreover, the dearth of regional offices among the local communities could pose procedural complications for farmers, requiring them to apply to remote offices.¹⁵⁸ The practical solution is perhaps to authorize NGOs or government bodies to apply for benefit sharing on a farmer's behalf.¹⁵⁹ Finally, Dr. Gopalakrishnan points out that protection for local communities is inadequate because the breeder is not required to show prior informed consent from the community from which he obtained the traditional knowledge.¹⁶⁰

e. Compensation for Spurious Seed

To protect farmers from overly optimistic breeders, the Act requires breeders to disclose the expected performance.¹⁶¹ Should the varieties fail to perform as disclosed, farmers, as consumers, may seek compensation from the breeder.¹⁶² A

151. *Id.*

152. *Id.* §§ 2(b), 26.

153. *Id.* § 26.

154. *Id.* § 26(5).

155. *Id.*

156. See Sahai, *supra* note 145, at 409-410.

157. Gopalakrishnan, *supra* note 98, at 18.

158. *Id.*

159. *Id.*

160. *Id.*

161. PPVFA, *supra* note 4, § 39(2).

162. *Id.*

statutory authority determines whether the breeder has made spurious claims, and thus, whether the farmer is entitled to compensation.¹⁶³ The objective is to ensure that quality is not compromised in the zeal to market new varieties. The advantage of the provision is that it forces breeders to conform to minimum quality specifications and reduces the natural tendencies of big breeders to over advertise.¹⁶⁴ Critics have, however, opined that the clause vests unlimited discretion on the statutory authority.¹⁶⁵ In reality, the statutory authority's discretion may in fact be limited by the language of the breeder's terms of license which will presumably embody adequate exceptions.

f. Protection against innocent infringement

Another important protection outlined in Section 42, is against innocent infringement of protected varieties. Innocent infringement, which is a defense against infringement, requires proof of lack of knowledge or awareness of the protected status of the material at the time of infringement.¹⁶⁶ Such proof can include matters like the literacy level of the farmer or the lack of licenses written in his local language. The exception is important considering that: a) farmers in third world countries tend to be illiterate, with limited knowledge of their rights and no knowledge of intellectual property mechanisms, and b) breeders are generally ruthless in prosecuting infringement, innocent or otherwise. The case of Percy Schmeiser, a Canadian farmer from Bruno, Saskatchewan, demonstrates the point.¹⁶⁷ In 1998 the agro-business giant Monsanto sought \$145,450 in damages from Schmeiser for illegally planting its patented 'Roundup Ready' canola seed.¹⁶⁸ Unmoved by Schmeiser's claim that the seeds blew onto his farm without his knowledge from the surrounding farms, the Canadian Federal (Appellate) Court agreed with Monsanto and awarded damages based on Schmeiser's 1998 profits and the amount of technical fees for contracted use of the seed.¹⁶⁹ The court reasoned that Schmeiser had a duty to destroy the protected variety once he became aware of the infringement.¹⁷⁰ The Canadian Supreme Court, though, set aside the award for account of profit but left the award for technical fees.¹⁷¹ While it is unlikely that Indian courts would impose a duty to

163. *Id.*

164. *Id.* § 39.

165. Sahai, *supra* note 145, at 410.

166. PPVFA, *supra* note 4, § 42.

167. Jill Sudduth, *Where the Wild Wind Blows: Genetically Altered Seed and Neighboring Farmers*, 2001 DUKE L. & TECH. REV. 15 (2001).

168. *Id.*

169. Monsanto Canada Inc. v. Schmeiser, [2001] 3 F.C.D. 35, *modified*, [2004] 1 S.C.R. 902.

170. *Id.* (The Canadian Supreme Court set aside the award for account of profit, but left the award for technical fees).

171. [2004] S.C.C. 34, *revising in part* [2002] F.C.A. 309; [2003] 2 F.C. 165, *affirming* [2001] F.C.T. 256; [2001] 202 F.T.R. 78; *See* Jeremy DeBeer, *Reconciling Property Rights in Plants*, 8 J. OF WORLD INTELL. PROP.

destroy, the exception can prevent breeders from being overly aggressive. Furthermore, protection against innocent infringement is required to maintain the social welfare and trade balance, considering the poverty levels of farming communities in poorer nations. Moreover, local cultures in most poor countries promote sharing, and hence, a certain level of innocent infringement should be expected in third world countries. In such circumstances, imposition of a duty to destroy or any equivalent duty, as outlined in the Percy Schmeiser case, would be an unworkable solution considering the lack of sophistication among the farming communities in poor countries.

Section 42 does away with the duty to destroy innocently infringed materials, perhaps considering the harvest's nexus with the farmer's livelihood. As a balancing mechanism, the statute places on the farmer the burden of proving innocent infringement.¹⁷² The innocent infringement exception is economically efficient because the Indian courts are already over burdened. Furthermore, the Canadian-style suits could generate huge protests from farmers.¹⁷³ The exception is outstanding with a unique national flavor. The right to resow coupled with the exemption from accidental infringement provides protection for farmers' way of life.

g. Research Exemptions & Essentially Derived Variety

The PPVFA promotes research on protected varieties by allowing anyone to use a registered variety for "conducting experiment or research" or as an "initial source of variety for the purpose of creating other varieties."¹⁷⁴ The statute however, requires authorization from the owner of the initial variety to derive the second-generation variety.¹⁷⁵ Such authorization is required only where "repeated use of such variety as a parental line is necessary for commercial production of such newly developed variety."¹⁷⁶ The provision promotes research while preventing the premature exploitation of protected varieties in the name of research.

PPVFA takes a position different from that of UPOV, which vests rights for up to two generations of essentially derived varieties on the breeder. While the PPVFA defines "essentially derived" similarly to UPOV, it additionally grants rights over the essentially derived variety (EDV) to the farmer or breeder (second generation breeder) who derived it, and not to the breeder of the initial variety,

1, 6 (2005) (specifically noting that the case nullified farmer's rights).

172. *Id.* 42(ii).

173. Shaila Seshia, *Plant Variety Protection and Farmers' Rights in India:*

Law-Making and the Cultivation of Varietal Control, Institute for Development Studies, http://www.ids.ac.uk/ids/KNOTS/PDFs/EPWarticle_Shaila.pdf. See generally Press Release, Gene Campaign, Monsanto Wins in Canada: Can it in India? (May 27, 2004), <http://www.genecampaign.org/News/news-monsantocanada.htm>.

174. PPVFA, *supra* note 4, § 30.

175. *Id.* § 28.

176. *Id.* § 30.

unless the EDV was also developed by the breeder of the new variety.¹⁷⁷ EDVs can be registered provided they are accompanied by the required documentation. Dr. S. Nagarajan, the Director appointed under the PPVFA points out the requirement that “the registered variety (NV+EDV₁+EDV₂) cannot exceed the protection period of 15 years or 8 years, as the case may be.”¹⁷⁸ He adds that the statute has, in effect, “weaned the New Variety from that of the EDV.”

h. Public Interest Exceptions & Compulsory Licensing

The PPVFA's public interest exception is wider than UPOV's and covers protection of “public order or public morality or human, animal and plant life and health or to avoid serious prejudice to the environment.”¹⁷⁹ Similarly, varieties embodying technology (including genetic and terminator technology), which maybe harmful to the public or animals, are rendered unregistrable under the statute.¹⁸⁰

Tied closely with the public interest exception is the extensive compulsory license provision. The provision is styled similarly to section 84 of the Patent Act of 1970. At the end of three years, any protected variety can be subject to compulsory licensing if the “reasonable requirements of the public for seed or other propagating material of the variety have not been satisfied or that the seed or other propagating material of the variety is not available to the public at a reasonable price.”¹⁸¹ Price shall also be a consideration in determining whether the reasonable requirements of the public are satisfied. The objective is to use compulsory licensing as deterrence to keep market prices of protected materials low.

While the PPVFA is not flawless, the statute showcases that farmers' and breeders' rights can be adequately and concurrently protected.¹⁸² In a country like India, ensuring food security by providing farmers' rights is important for economic stability.¹⁸³ The PPVFA's effectiveness lies in catering to the needs of nations that prefer to promote innovations without threatening farmers' livelihoods.¹⁸⁴ TRIPS grants members the flexibility to prioritize farmers in shaping a

177. *Id.* § 23(6) (“The rights of the breeder of a variety contained in section 28 shall apply to the breeder of essentially derived variety”). If the original breeder or company of the new variety develops an essentially derived variety, prior informed consent is not required. *Id.*

178. E-mail from Dr. S. Nagarajan, Director-General, PPVFA, India, to authors (Sept. 1, 2007) (on file with authors).

179. PPVFA *supra* note 4, § 29.

180. *Id.* § 29(3).

181. *Id.* § 47; *see also* Patents Act of 1970, 27 INDIA A.I.R. MANUAL 450, § 53(1)(a) (2d ed. 1979).

182. *But see* Gopalakrishnan, *supra* note 98, at 3 (arguing that India should protect breeder's rights using patents and have a separate legislation for protecting farmer's rights and traditional knowledge).

183. Suman Sahai, *India's New Plant Variety Protection and Farmers' Rights Act*, GENE CAMPAIGN, 2001, available at, www.ias.ac.in/cursci/feb102003/407.pdf.

184. *Id.*

policy for plant variety protection. The PPVFA is exemplar in its ability to capitalize on the flexibilities in TRIPS. India should now work on eliminating the loopholes in the PPVFA. Strengthening the conceptual framework of the PPVFA can result in an efficient *sui generis* model for plant protection tailored towards national objectives.

B. THE SEEDS BILL, 2005

Historically, the seed sector in India was governed by the Seeds Act of 1966, the Seeds Control Order of 1983, and the Seed Policy of 1988.¹⁸⁵ The Seeds Act of 1966 provides a regulatory framework, laying down minimum quality standards. An elaborate institutional coalition set up consisting of the Central Seeds Committee, seed certification agencies, central and state seed testing laboratories, seed analysts, and seed inspectors implemented this law.¹⁸⁶ Only specified seed varieties fall within the scope of the Seeds Act of 1966. Unspecified varieties fall outside the scope of the legislation. Moreover, seed certification is a voluntary not a mandatory process.¹⁸⁷

The emergence of the private seed sector rendered the Seeds Act inadequate in several ways, prompting the New Seed Policy in 1988 and later, in 2002.¹⁸⁸ The Policy proposed to improve seed distribution networks,¹⁸⁹ establish adequate infrastructure,¹⁹⁰ and facilitate biotechnology initiatives and private participation.¹⁹¹ As part of the proposal, the Seeds Policy of 2002 sought to "regulate the sale, import and export of seeds"¹⁹² During the same time, state governments began new initiatives to regulate the seed industry because of an increased sales of spurious seeds.¹⁹³ Consequently, the Indian Agricultural Ministry introduced the Seeds Bill in 2004 to regulate the market by replacing the earlier enactment.¹⁹⁴

The Bill requires commercial producers and dealers of seed to register all

185. *Id.*; see also Milind Murugkar, Bharat Ramaswami and Mahesh Shelar, *Liberalization, Biotechnology and the Private Seed Sector: The Case of India's Cotton Seed Market*, Discussion Paper 06-05, Indian Statistical Institute (Jan, 2006) available at <http://www.isid.ac.in/planning/workingpapers/dp06-05.pdf>.

186. The Seeds Act, 1966, No. 54 Acts of Parliament 1966 (Dec. 29, 1966) available at <http://agricoop.nic.in/sublegiseed1966.htm#The%20Seeds%20Act,%201966>; Kavitha Kuruganti, *This Seeds Bill Must Go*, INDIA TOGETHER (Jul. 6, 2006), <http://www.indiatogether.org/2005/aug/agr-seedbill.htm>.

187. The Seeds Act, 1966, *supra* note 186.

188. National Seeds Policy 2002, § 4, <http://1/agricoop.nic.in/seedpolicy.htm>; see also M.R. Madhavan & Kaushiki Sanyal, *The Seeds Bill 2004*, INDIA TOGETHER (June 4, 2006), available at, <http://www.indiatogether.org/2006/jun/law-seeds.htm>.

189. *Id.*

190. *Id.* § 5.

191. *Id.* § 6.

192. *Id.* § 3.1.

193. Kuruganti, *supra* note 186.

194. Seeds Bill of 2004, *supra* note 15; see also Madhavan & Sanyal, *supra* note 188.

marketable seed.¹⁹⁵ Transgenic seeds require additional clearance under the Environment Protection Act, although no specific disclosure requirements are included to qualify for registration.¹⁹⁶ The lack of separate disclosure requirements for transgenic (genetically modified) seeds can lead to misuse by potentially diminishing the distinction between existing and new (protected) varieties. For instance, it can result in non-transgenic seeds in the public domain being packaged with fancy brands, (which, by itself, is agreeable). The problem is, since there is no requirement for disclosure of the status of the protected seeds, when the Seeds Bill interacts with the PPVFA, farmers may not know that some of branded seeds are not protected by IP rights. If they are not aware of the status as protected or otherwise, farmers may avoid brown bagging seeds that are in fact in the public domain.

Furthermore, the Bill requires all dealers of seeds to be registered.¹⁹⁷ Generally, over 80% of all seed used in India is grown, saved, stored, exchanged and bartered by local farmers.¹⁹⁸ Considering that dealing with seeds was considered a natural right of farmers for centuries, the Seed Bill may be unsuccessful in getting all small farmers to register.¹⁹⁹ Moreover, it is unclear whether one seed producer may sell a seed registered by a *third* producer.²⁰⁰ On a general reading, the statute disassociates the registration requirements of the seeds from the dealer, implying that any registered dealer can sell any registered seed. However, no viable mechanism is being contemplated for a registered dealer to determine whether a seed is in fact registered. Hence, the right of a third dealer to sell seeds registered by other dealers or producers remains unclear.

The Seeds Bill's biggest flaw is that it has not been fully harmonized with the PPVFA. The bill does not take into account the complexities that result from the benefit sharing arrangements proposed by the PPVFA. Hence, the bill has not fully addressed the issue of whether registered seeds of an existing variety and farmers' variety can be sold without sharing the benefits with the community or the farmers. Similarly, the Seeds Bill, unlike the PPVFA, does not embody a provision for pre-grant opposition to register seeds.²⁰¹

As for public interest exceptions, the bill specifies that registration may be refused²⁰² or cancelled in the public interest.²⁰³ The bill, however, lacks a

195. Seeds Bill of 2004, *supra* note 15, § 1(3); *see also id.* § 13.

196. *Id.* § 15.

197. *Id.* § 22(1) ("Every person who desires to carry on the business of selling, keeping for sale, offering to sell, bartering, import or export or otherwise supply any seed by himself, or by any other person his behalf" must be registered as a dealer").

198. *See* Srilata Swaminathan, *The Seeds of Our Destruction*, LIBERATION INDEX, http://www.cpiml.org/liberation/year_2005/August05/seeds_bill.htm.

199. Seeds Bill 2004, *supra* note 15, § 22(1).

200. Madhavan & Sanyal, *supra* note 188.

201. Suman Sahai, Presentation, Indo-US Exchange, *Intellectual Property In Agriculture* (Dec. 2006).

202. Seeds Bill 2004, *supra* note 15, § 18.

203. *Id.* at § 16.

provision to control price and regulate supply of seeds under public interest conditions, unlike the PPVFA which has a relatively detailed compulsory licensing provision. Moreover, the bill provides for a possible maximum term of 36 years of protection. Although registration under the bill does not grant any IP property protection, it confers the right to market the seed.²⁰⁴ Considering this, a 36 year period of market protection based on the application information (i.e., the results of multi-locational trials) seems egregious.

The Seed Bill vests jurisdiction for initiating disputes regarding seed quality and compensation for failure of expected performance with the consumer court by implicating the Consumer Protection Act (CPA).²⁰⁵ Interestingly, the PPVFA vests jurisdiction in the national statutory authority for issues relating to seed failure. If the PPVFA has to act in concert with the Seeds Bill, it could create a procedural mess because issues of seed quality would fall under the PPVFA to be determined by the national authority, while the same issues under the Seed Bill would go to the consumer courts. If a question implicates both the enactments, it is unclear which authority will take up the matter or how the question would be divided. Other commentators have criticized the idea of vesting jurisdiction with the consumer courts as disadvantageous to farmers, requiring them to prove that the underperformance of a crop is based solely on the poor quality of seed rather than on a combination of factors, such as environmental conditions or human inputs.²⁰⁶ Furthermore, the critics assert that the district forums and the state councils created by the consumer courts have limited expertise in agriculture.²⁰⁷

In short, the Seeds Bill is a shoddy piece of legislation that fails to tie in several aspects of the Seed trade with the PPVFA. To the extent that one of the objectives of the Seeds Bill is to maintain a balance between farmers and breeders, the provision fails for want of clarity. The Seed Bill creates an unnecessary parallel system of registration along with the PPVFA. Creating a parallel system can result in negating the entitlements and protections previously granted to farmers under the PPVFA.²⁰⁸ NGOs have rightly pointed out such flaws in their attempts to thwart the Seeds Bill.²⁰⁹ Against the background of the PPVFA, which balances IP protection for plant breeders, farmers, and indigenous communities, the Seeds Bill is an ill-conceived legislative attempt lacking a clear purpose or even the ability to tie in with already established provisions of the PPVFA.

204. *See id.*, at § 13 ("No seed of any kind or variety shall, for the purpose of sowing or planting by any person, be sold unless such seed is registered under sub-section (2)").

205. Seeds Bill 2004, *supra* note 15, § 20.

206. Madhavan & Sanyal, *supra* note 188.

207. Press Release, Gene Campaign, The Controversial New Seed Bill, <http://www.genecampaign.org/Publication/Pressrelease/THE%20CONTROVERSIAL%20NEW%20SEED%20BILL.pdf>.

208. *See* Anicar Aravind, *Is this Government Anti-Farmer?* IMC INDIA (Mar. 3, 2005) <http://india.indymedia.org/en/2005/03/210193.shtml>.

209. *Id.*

CONCLUSION

From the time India gained independence in 1947, the various Indian governments have attempted to achieve national goals. The means the various governments used, such as promoting public sector research, have worked well to achieve Indian national objectives. India's strength lies in choosing a balanced approach that does not sacrifice national welfare and food security for political expediency. Hence, India should continue to boldly embrace a system that works within the confines of its national objectives. National considerations like biodiversity protection, sustainable use and the recognition of community-based rights are important issues that need not be sidelined to accommodate commercial breeders.²¹⁰ At the same time, commercial breeders need not be shunned just because they are breeders. India should now strengthen the loopholes in the PPVFA and tailor a seed policy that compliments the PPVFA. The enactment of the PPVFA signifies what can be termed a cautious opening up of the agricultural market to privatizing agricultural trade.

While privatization of food may increase consumer choice, aggressive privatization can result in marginalizing those who practice traditional farming, which in turn would increase the divide between the rich and the poor. It could also lead to a monopoly over some important foods by one or more private players. In order to derive the full benefits, privatization should be timed to compliment the opening up of the international agricultural markets for existing players. Unfortunately, as long as negotiations in agricultural subsidies fail, developed nation subsidies are likely to displace the markets of farmers from poorer countries. Developing nations like India have already shown their commitment to the trade agenda by enacting the Patent Act in 2005 and the PPVFA in 2004. Now, powerful developing countries should step up to ensure that local politics do not cause rich developed nations to renege on their obligation to reduce agricultural subsidies.

210. GRAIN briefing, *supra* note 9.

